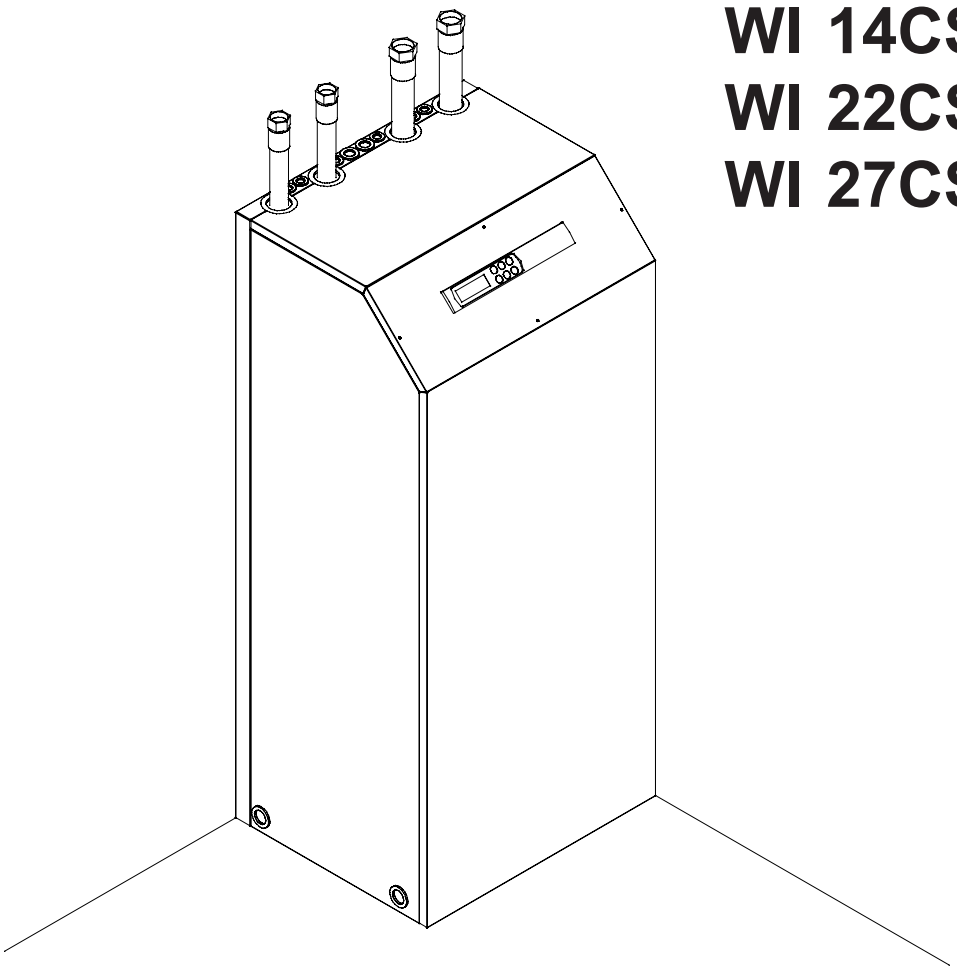
Dimplex

CE

MOUNTING and OPERATING MANUAL

Water-to-Water Heat Pump for Indoor Installation

WI 9CS
WI 14CS
WI 22CS
WI 27CS



Order No.: 452230.67.03 FD 8404

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1 READ IMMEDIATELY

1.1 Important Information

CAUTION! **The well water must meet the required water quality standards.**

CAUTION! **The heat pump is not attached to the wooden pallet.**

CAUTION! **The heat pump must not be tilted more than max. 45° (in either direction).**

CAUTION! **Do not lift unit by the holes in the panel assemblies!**

CAUTION! **Flush the heating system prior to connecting the heat pump.**

CAUTION! **When connecting the load lines be sure to observe the clockwise phase sequence.**

CAUTION! **Commissioning of the heat pump must be performed in accordance with the operating instructions of the heat pump controller.**

CAUTION! **Any work on the heat pump may be performed by an authorised and competent customer service only.**

CAUTION! **Before opening the unit, all electrical circuits must be disconnected from the power supply.**

1.2 Legal Provisions and Directives

This heat pump is in compliance with all relevant DIN/VDE regulations and EU directives. These are described in more detail in the EC Declaration of Conformity.

The electrical connection of the heat pump must be performed according to and conforming with all relevant VDE, EN and IEC standards. Beyond that, all connection requirements of the local electrical utility company have to be observed.

The heat pump is to be plumbed into the heat source and heating systems in accordance with all relevant regulations.

1.3 Energy-Efficient Use of the Heat Pump

By operating this heat pump, you contribute to the protection of the environment. An important prerequisite for energy-efficient operation is the careful sizing of the heating system and the heat source. In particular, it is important to keep water flow temperatures as low as possible. All energy consumers connected should therefore be suitable for low flow temperatures. A 1 K higher heating water temperature corresponds to an increase in power consumption of approx. 2.5 %. Underfloor heating systems with flow temperatures between 30 °C and 40 °C are optimally suited for energy-efficient operation.

2 PURPOSE OF THE HEAT PUMP

2.1 Application

The water-to-water heat pump is designed for use in existing or newly built heating systems. Water, which can be supplied from wells, or the like, is used as the heat carrier.

To prevent any corrosion damage to the evaporator, the well water must be evaluated in accordance with DIN 50930 as to the corrosion risk of metallic materials.

More details are contained in the Project Planning and Installation Manual for heat pumps for heating purposes.

CAUTION! **The well water must meet the established water quality standards.**

2.2 Principle of Operation

A well pump conveys the water into the evaporator of the heat pump where it gives off heat to the refrigerant in the refrigeration cycle.

The refrigerant is then "sucked in" by the electrically driven compressor, is compressed and "pumped" to a higher temperature level. The electrical power needed to run the compressor is not lost, but most of the generated heat is transferred to the refrigerant as well.

Subsequently, the refrigerant is passed through the condenser where it transfers its heat energy to the heating water.

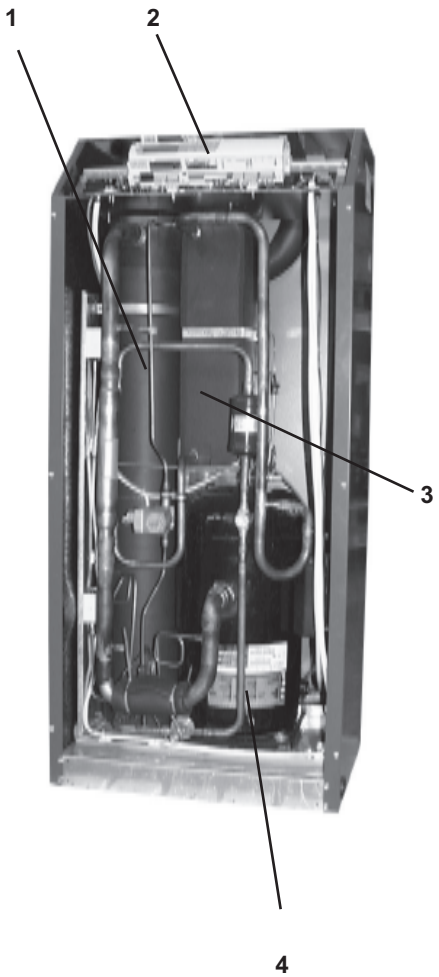
Based on the thermostat setting, the heating water is thus heated to up to 55 °C.

3 BASELINE UNIT

The baseline unit consists of a heat pump, ready for connection, for indoor installation, complete with housing, control panel and integrated controller. The refrigeration cycle contains the refrigerant R407C. The refrigerant is CFC-free, non-ozone depleting and non-combustible.

All components required for the operation of the heat pump are integrated in the control panel. The power feed for the load and control current must be field-installed by the customer.

The supply lead of the well pump (to be provided by the customer) must be connected to the control panel. When so doing, check whether the capacity of the factory-installed motor protecting device is adequate for the field-installed pump.

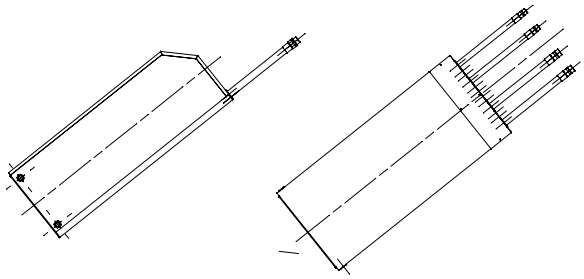


1) Evaporator
2) Control panel
3) Condenser
4) Compressor

4 TRANSPORT

A lift truck is suited for transporting the unit on a level surface. If the heat pump needs to be transported on an uneven surface or carried up or down stairs, carrying straps may be used for this type of transport. These straps may be passed directly underneath the wooden pallet.

CAUTION! **The heat pump is not secured to the wooden pallet.**



CAUTION! **The heat pump must not be tilted more than max. 45° (in either direction).**

For lifting the unit without pallet, the holes provided in the sides of the frame should be used. The side panel assemblies must be removed for this purpose. Any ordinary pipe can be used as a carrying aid.

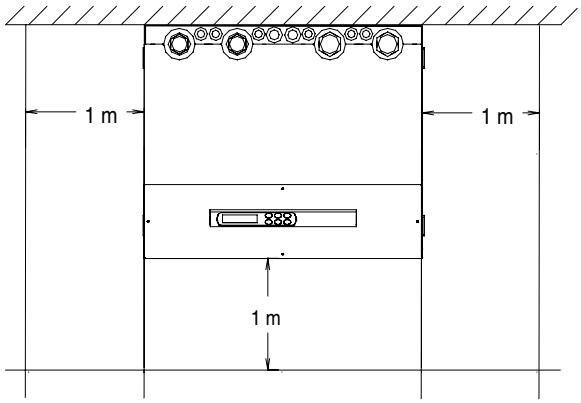
CAUTION! **Do not lift unit using the holes provided in the panel assemblies!**

5 INSTALLATION

5.1 General Information

As a rule, the unit must be installed indoors on a level, smooth and horizontal surface. The entire base frame should thereby make close contact with the surface in order to ensure adequate sound insulation. Failing this, additional sound insulation measures may become necessary.

The heat pump should be located to allow safe and easy maintenance/service access. This is ensured if a clearance of approx. 1 m in front of and to each side of the heat pump is maintained.



5.2 Sound Emissions

The heat pump offers silent operation due to efficient sound insulation. To prevent noise transmission to the foundation, a suitable, sound dampening rubber mat should be placed underneath the base frame of the heat pump.

The transmission of noise to the heating system is prevented by pressure hoses already integrated into the heat pump.

6 MOUNTING

6.1 General

The following connections need to be established on the heat pump:

- supply/return flow of well system
- supply/return flow of heating system
- power supply

6.2 Heating-Side Connection

CAUTION! **The heating system must be flushed prior to connecting the heat pump.**

Before completing the heat pump connections on the heating water side, the heating installation must be flushed in order to remove any impurities that may be present, as well as residues of sealing material, and the like. Any accumulation of deposits in the condenser may result in a total failure of the heat pump.

Once the installation on the heating side has been completed, the heating system must be filled, de-aerated and pressure-tested.

Heating water minimum flow rate

The heating water minimum flow rate through the heat pump must be assured in all operating states of the heating system. This can be accomplished, for example, by installing a differential pressure-free manifold or an overflow valve. The procedure for setting an overflow valve is described in the Chapter Commissioning.

Frost protection for installations prone to frost

Provided the controllers and circulating pumps are ready for operation, the frost protection feature of the controller is active. If the heat pump is taken out of service or in the event of a power failure, the system has to be drained. In heat pump installations where a power failure cannot be readily detected (holiday house), the heating circuit must contain a suitable antifreeze product.

6.3 Heat Source-Side Connection

The following procedure must be observed when making the connection:

Connect the well lines to the flow and return pipes of the heat pump.

CAUTION! **The well water must meet the required water quality standard.**

6.4 Electrical Connection

The following electrical connections must be established on the heat pump.

- Connection of the control wire to the control panel of the heat pump via terminal X1: L/N/PE.
- Connection of the load wire to the control panel of the heat pump via terminal X5: L1/L2/L3/PE.
- Connection of the well pump load wire to the control panel of the heat pump via terminal X5: L11/L21/L31/PE.
- Connection of the well pump (to be provided by the customer) to the control panel of the heat pump via terminal X1: PE and pump contactor K2: 2/4/6.

When connecting the load wire of the well pump it must be ensured that the power supply for these terminals cannot be disconnected by the tariff contactor in order to ensure the cutout delay of the well pump.

All electrical components required for the operation of the heat pump are located on the control panel.

For detailed instructions concerning the connection and functioning of the heat pump controller refer to the operating manual supplied with the controller..

An all-pole disconnecting-device with a contact-gap of at least 3 mm (e.g. utility company disable contactor or power contactor) as well as a 3-pole circuit breaker with simultaneous tripping of all external conductors. The required cross-sectional area of the conductor is to be selected according to the power consumption of the heat pump, the technical connection requirements of the relevant electrical utility company as well as all applicable provisions. Details on the power consumption of the heat pump are contained on the product information sheet and the rating plate. The terminals are designed for a conductor cross-section of max. 10 mm˝.

CAUTION! **When connecting the load line, make sure that the phase sequence is correct (if the phase sequence is not correct the heat pump will not perform properly and generate abnormal noise).**

7 COMMISSIONING

7.1 General

To ensure proper commissioning it should be carried out by an after-sales service authorized by the manufacturer. Only then can an extended warranty period of 3 years in total be granted (cf. Warranty service).

7.2 Preparation

Prior to commissioning, the following items need to be checked:

- All connections of the heat pump must have been made as described in Chapter 6.
- The heat source system and the heating circuit must have been filled and tested.
- In the well and heating circuits all valves that could impair the proper heating water flow must be open.
- The settings of the heat pump controller must be adapted to the heating installation in accordance with the instructions contained in the controller's operating manual.

7.3 Procedure

The start-up of the heat pump is effected via the heat pump controller.

CAUTION! **Commissioning of the heat pump must be performed in accordance with the mounting and operating manual of the heat pump controller.**

Where an overflow valve is fitted to assure the minimum heating water flow rate, the valve must be set in accordance with the requirements of the heating installation. An incorrect setting may result in various error symptoms and an increased electric power consumption. To correctly set the overflow valve, the following procedure is re-commended:

a) Open all heating circuits and close the overflow valve. Determine the resulting temperature difference between supply and return flow.

b) Close all of the heating circuits that may also be closed during operation (depending on the type of heat pump usage) so that the most unfavourable operating state - with respect to the water flow rate - is achieved.

Any malfunctions occurring during operation are displayed on the heat pump controller and can be corrected as described in the operating manual of the heat pump controller.

8 CARE/CLEANING

8.1 Care

The heat pump is maintenance-free. To prevent malfunctions due to sediments in the heat exchangers, care must be taken that no impurities can enter the heat source system and heating installation. In the event that operating malfunctions due to contamination occur nevertheless, the system should be cleaned as described below.

8.2 Cleaning of Heating Side

The ingress of oxygen into the heating water circuit may result in the formation of oxidation products (rust). It is therefore important - in particular with respect to the piping of underfloor heating systems - that the installation is executed in a diffusion-proof manner.

Also residues of lubricating and sealing agents may contaminate the heating water.

In the case of severe contamination leading to a reduction of the performance of the condenser in the heat pump, the system must be cleaned by a heating technician.

According to current knowledge, we recommend cleaning with a 5% phosphoric acid solution or, in the case that cleaning needs to be performed more frequently, with a 5% formic acid solution.

In either case, the cleaning fluid should be at room temperature. It is recommended that the heat exchanger be cleaned in the direction opposite to the normal flow direction.

To prevent acidic cleaning agents from entering the circuit of the heating installation we recommend that the flushing device be fitted directly to the supply and return lines of the condenser. To prevent any damage caused by cleaning agent residues that may be present in the system it is important that the system be thoroughly flushed using appropriate neutralising agents.

The acids must be used with great care, all relevant regulations of the employers' liability insurance associations must be adhered to.

If in doubt, contact the manufacturer of the chemicals!

CAUTION!

Caution - Heating Technicians ! Depending on the filling water quality and quantity, in particular in the case of mixed installations and plastic pipes, mineral deposits (rust sludge, lime) may form, impairing the proper functioning of the heating installation. A reason for this is the water hardness and oxygen dissolved in the filling water as well as additional oxygen from the air, which may penetrate via valves, fittings and plastic pipes (oxygen diffusion). As a preventive measure it is recommended that a physical water conditio-ner such as ELYSATOR be used.

8.3 Cleaning of Heat Source Side

A strainer is fitted in the heat source inlet of the heat pump in order to protect the evaporator against contamination. Initially, the filter screen of the strainer should be cleaned at relatively short intervals. Once there is less contamination, the intervals can be extended accordingly.

8.4 Water Quality Requirements

To prevent any so-called "ochredisation" (deposition of iron and manganese) of the heat pump system from occurring, the ground water must be free of all substances that could result in mineral deposits, and the limit values for IRON (< 0.2 mg/l) and MANGANESE (< 0,1 mg/l) must be complied with.

The use of surface water or saline water bodies is not permitted. Consult your local waterworks for some general information about any possible ground water usage. Water analyses are prepared by laboratories specialising in water technology.

No water analysis with respect to any corrosion of the evaporator is required if the average annual ground water temperature is not in excess of 13 °C. In this case, only the limit values for iron and manganese must be met ("ochredisation" risk).

9 MALFUNCTIONS/ TROUBLESHOOTING

This heat pump is a quality product and designed for trouble-free operation. In the event that a malfunction occurs nevertheless, you will be able to correct the problem easily yourself in the majority of cases. Simply consult the Malfunctions and Troubleshooting table in the operating manual of the controller.

Additional malfunctions can be interrogated at the heat pump controller.

If the problem cannot be corrected by the user, please contact the after-sales service in charge (see Warranty Certificate).

CAUTION!

Any work on the heat pump may only be performed by an authorized and qualified after-sales service.

CAUTION!

Prior to opening the unit, all of its electric circuits must be disconnected from the power source.

10 DECOMMISSIONING

10.1 Placing Out of Service in Summer

Placing the heat pump out of service in summer can be effected by switching the heat pump controller to the "Summer" operating mode.

10.2 End-of-Life Decommissioning/ Disposal

Before removing the heat pump, disconnect the machine from the power supply and close all valves. Environment-relevant requirements regarding the recovery, recycling and disposal of service fuels and components in accordance with all relevant standards must be adhered to. In this context, particular attention must be paid to the proper disposal of refrigerants and refrigeration oils.

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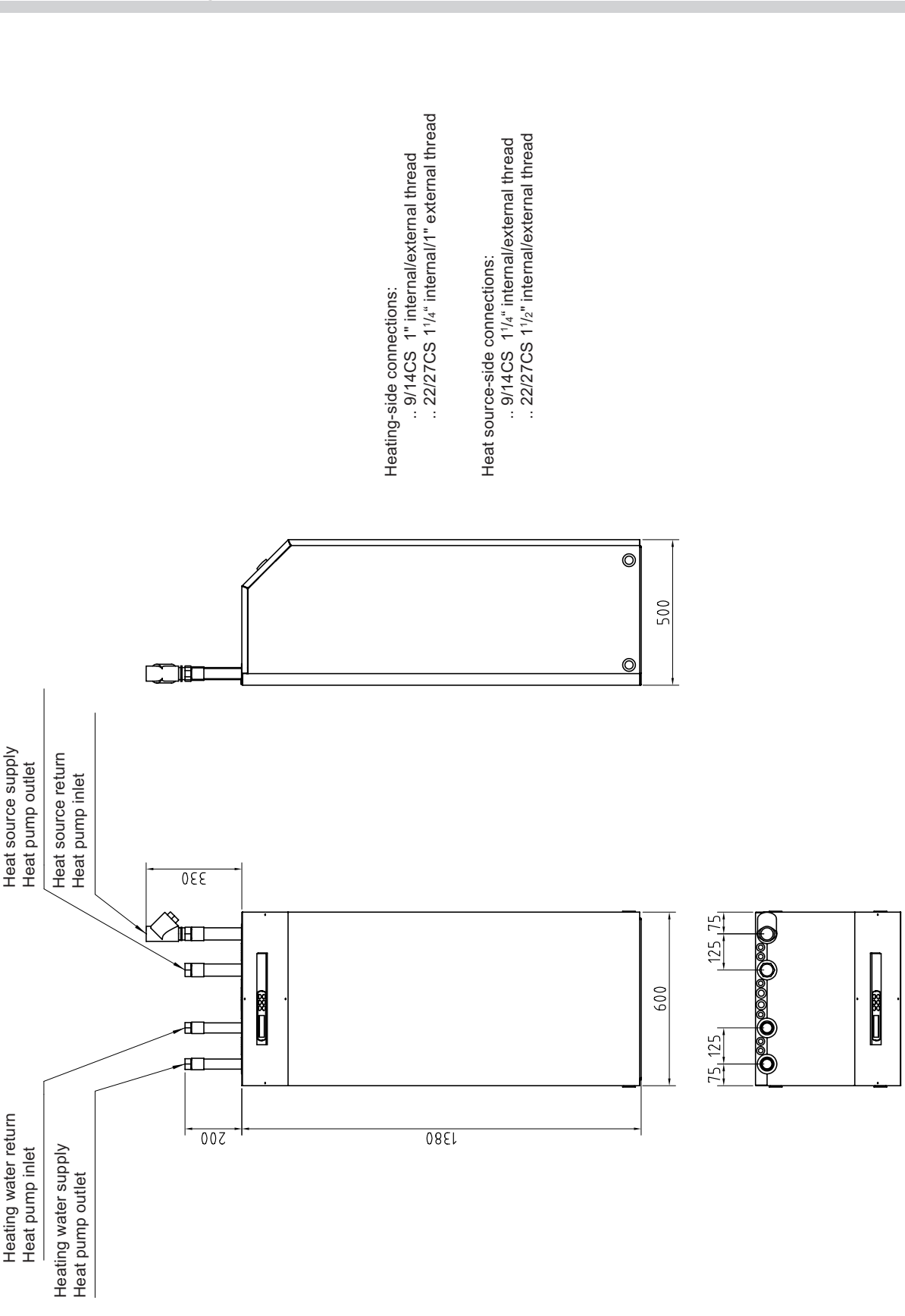
Dimensioned Drawing



Equipment Data

EQUIPMENT DATA for water-to-water heat pumps for heating						
1	**TYPE AND COMMERCIAL DESCRIPTION**		**..9CS**	**..14CS**	**..22CS**	**..27CS**
2	**MODEL**					
2.1	Enclosure type acc. to EN 60 529		IP 20	IP 20	IP 20	IP20
2.2	Installation site		indoor	indoor	indoor	indoor
3	**PERFORMANCE DATA**					
3.1	Operating temperature limits:					
	Heating water supply	°C	max. 55	max. 55	max. 55	max. 55
	Cold water (heat source)	°C	+7 to +25	+7 to +25	+7 to +25	+7 to +25
3.2	Heating water temperature spread at W10 / W35	K	9,5	8,8	9,6	9,4
3.3	Heating capacity / coeff.of perform. at W7 / W55 1)	kW / ---	6,9 / 2,5	12,2 / 2,5	19,0 / 3,2	24,6 / 3,2
	at W10 / W50 1)	kW / ---	7,7 / 3,2	13,4 / 3,6	20,8 / 3,8	26,4 / 3,8
	at W10 / W35 1)	kW / ---	8,3 / 5,1	13,6 / 5,2	21,5 / 5,5	26,4 / 5,1
3.4	Sound power level	dB(A)	53	55	58	59
3.5	Heating water flow rate at internal pressure difference	m³/h / Pa	0,75 / 7000	1,3 / 7000	2,0 / 8000	2,4 / 12500
3.6	Cold water flow rate at internal pressure difference (heat source)	m³/h / Pa	2,0 / 6200	3,3 / 19000	5,0 / 20000	7,0 / 16000
3.7	Refrigerant; total charge weight	type / kg	R407C / 1,7	R407C / 1,6	R407C / 3,2	R407C / 4,5
4	**DIMENSIONS, CONNECTIONS AND WEIGHT**					
4.1	Equipment dimensions without connections 4)	H x W x L mm	1380 x 600 x 500	1380 x 600 x 500	1380 x 600 x 500	1380 x 600 x 500
4.2	Equipment connections for heating system	inch	G 1" int/ext	G 1" int/ext	G1¼" int/G1"ext	G 1¼" i / G 1" a
4.3	Equipment connections for heat source	inch	G 1¼" int/ext	G 1¼" int/ext	G 1½" int/ext	G 1½" int/ext
4.4	Weight of transport unit(s) incl. packaging	kg	147	151	173	221
5	**ELECTRICAL CONNECTION**					
5.1	Nominal voltage; fusing	V / A	400 / 16	400 / 16	400 / 20	400 / 20
5.2	Nominal power consumption 1) W10 W35	kW	1,62	2,64	3,93	5,15
5.3	Starting current with soft starter	A	30 (without SS)	26	27	29
5.4	Nominal current W10 W35 / cos φ	A / ---	2,9 / 0,8	4,8 / 0,8	7,0 / 0,8	9,4 / 0,8
6	**COMPLIES WITH EUROPEAN SAFETY REGULATIONS**		3)	3)	3)	3)
7	**OTHER DESIGN CHARACTERISTICS**					
7.1	Water inside equipment protected against freezing 2)		yes	yes	yes	yes
7.2	Performance settings		1	1	1	1
7.3	Controller internal / external		internal	internal	internal	internal

1) These data characterize the size and performance capability of the system. For economic and energetic reasons, the balance point and control need to be taken into consideration as well. Abbreviations have the following meaning, e.g. W10 / W55: heat source temperature 10 °C and heating water supply temperature 55 °C.

2) The heating system circulating pump and the controller of the heat pump must be ready for operation at all times.

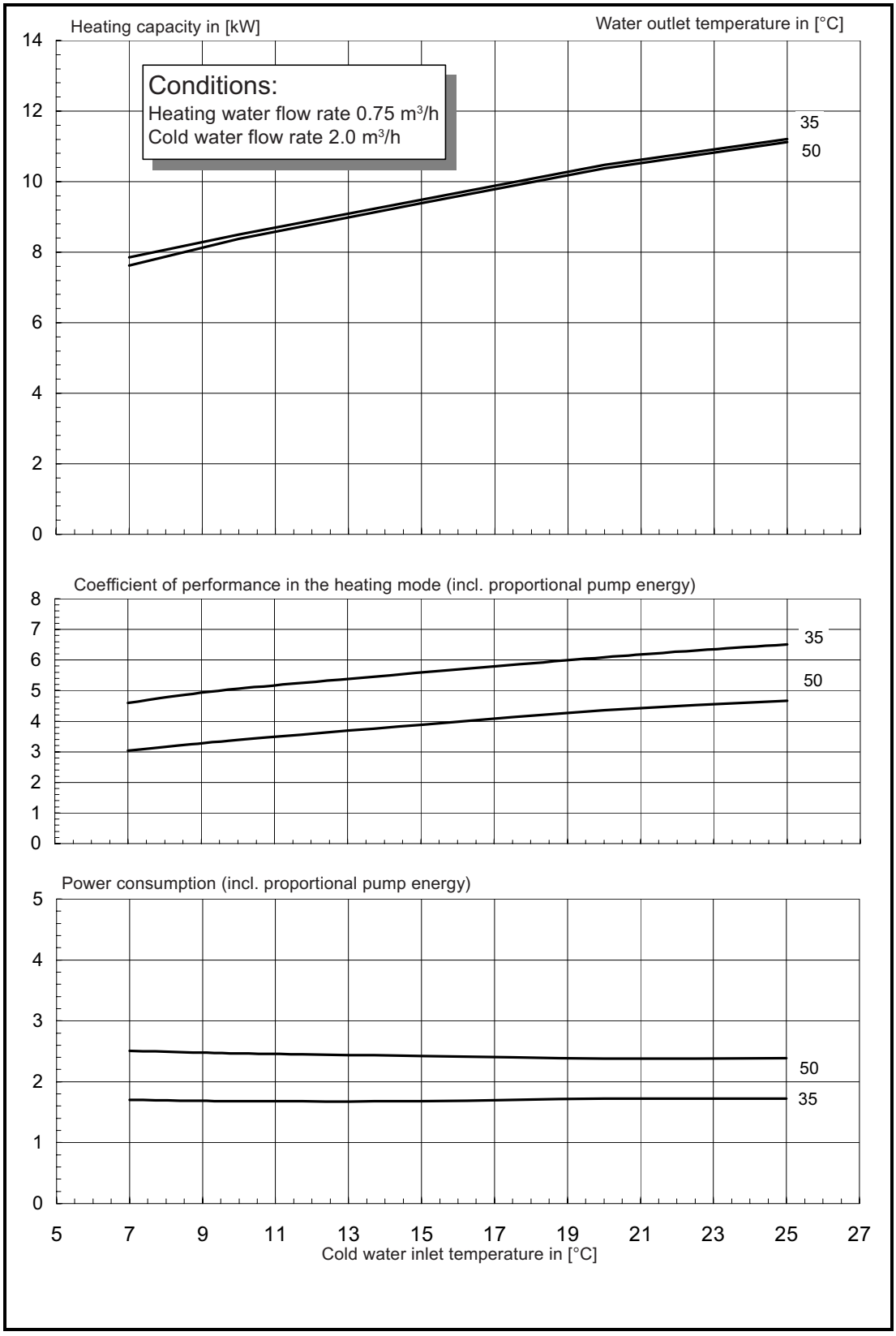
3) See EC Declaration of Conformity

4) Please keep in mind that more space is required for pipe connection, operation and maintenance.

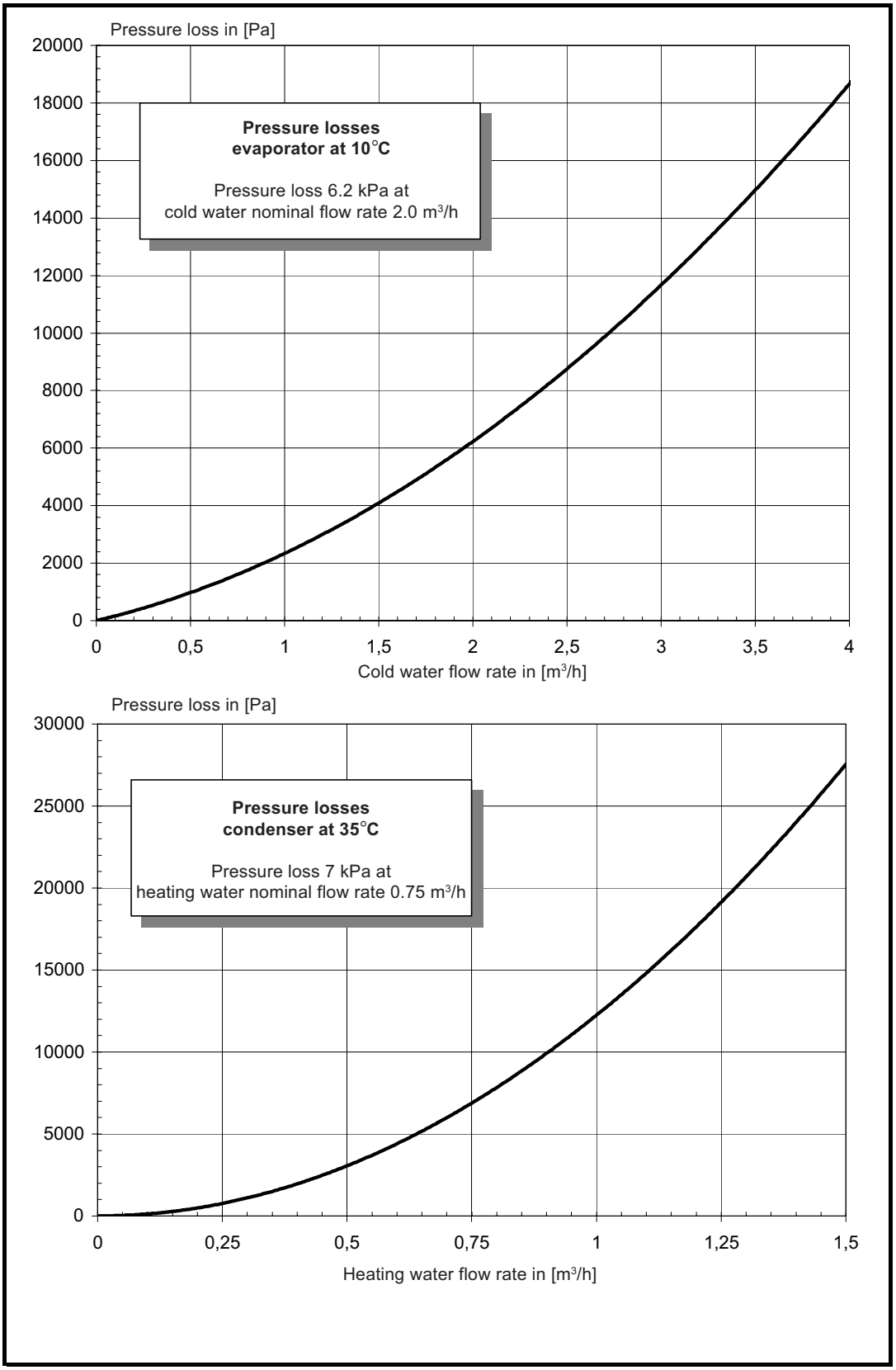
Subject to technical modifications

Edition: 24.03.2004

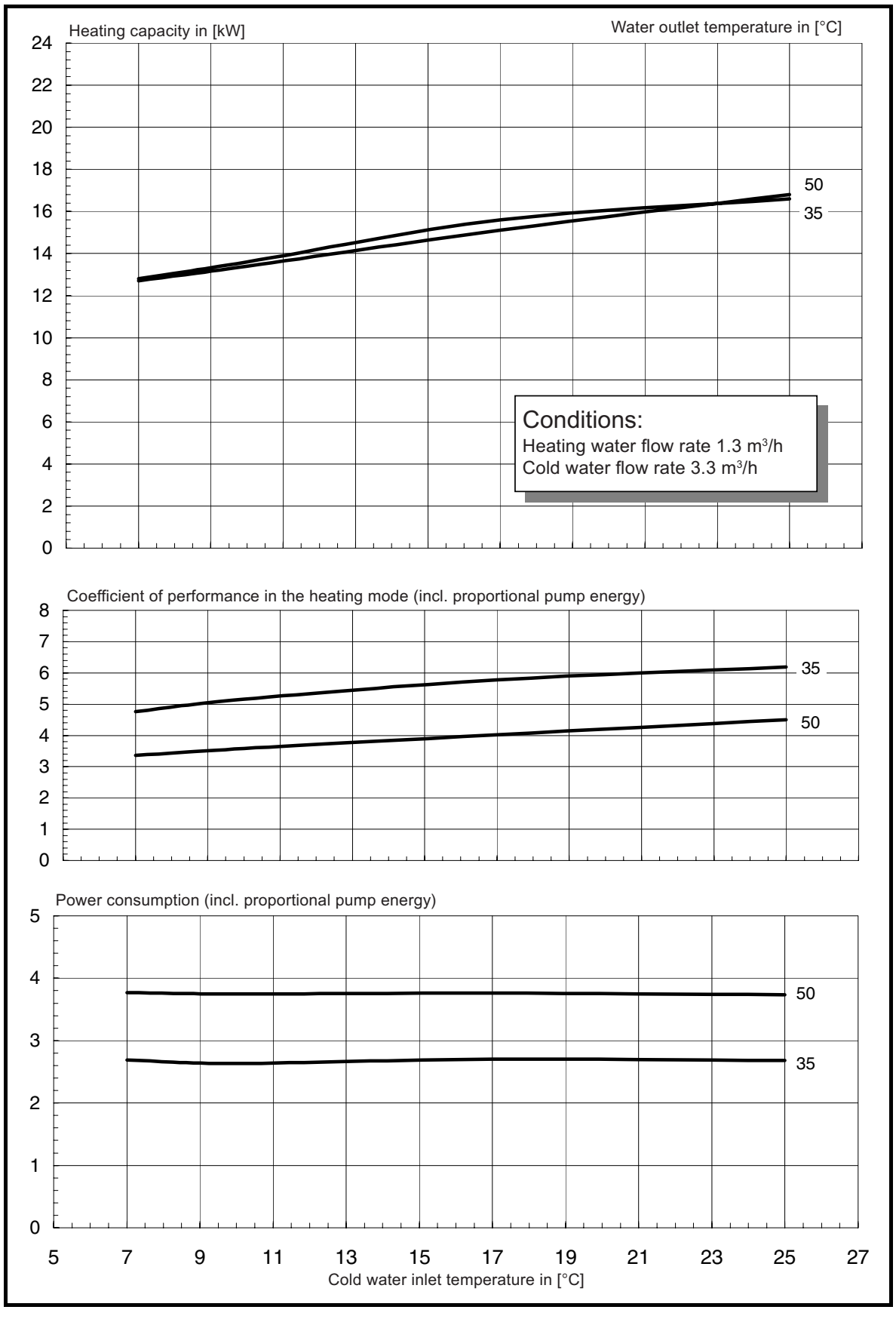
11.3.1 Performance Curves .. 9CS



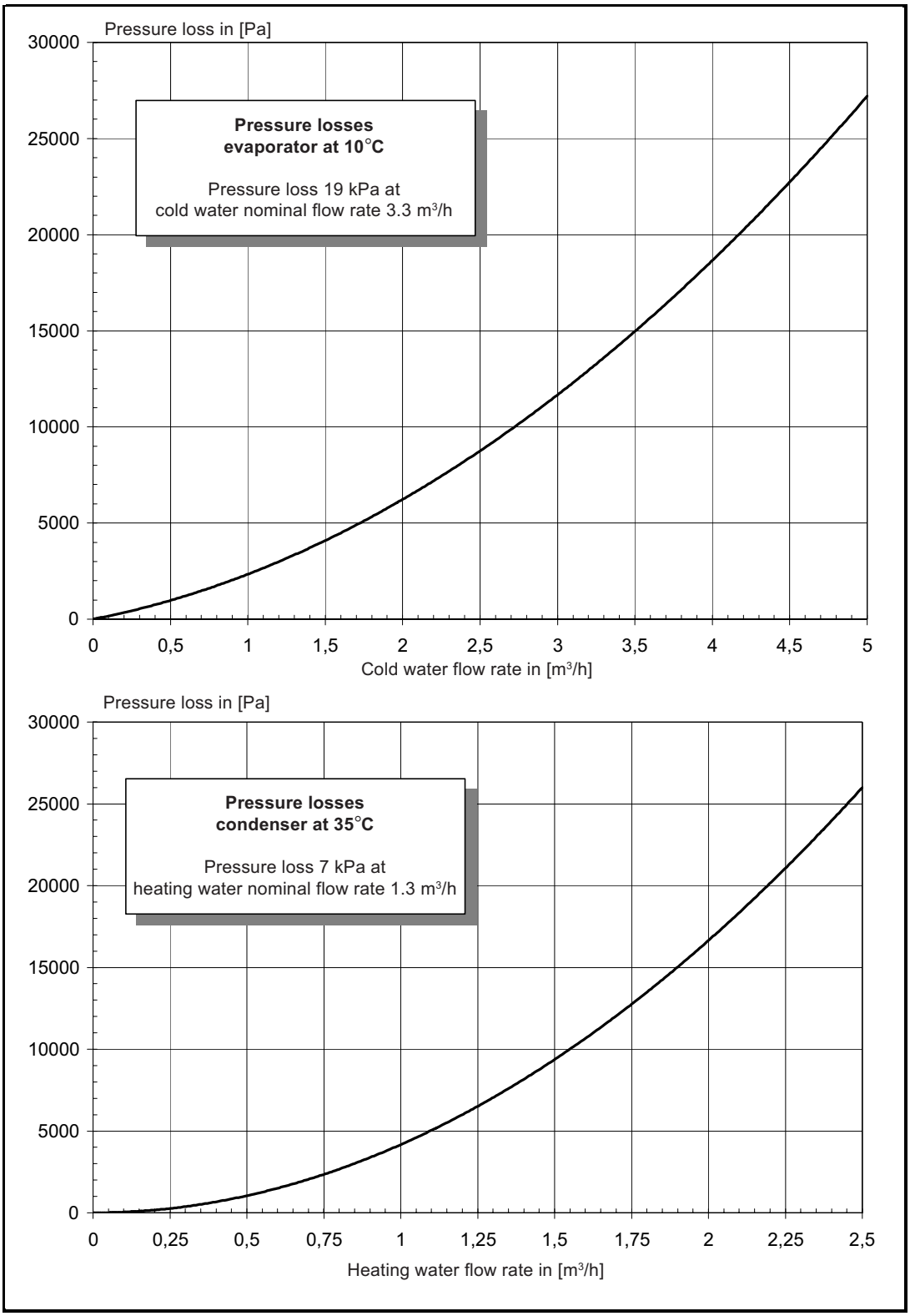
11.3.2 Pressure Losses .. 9CS



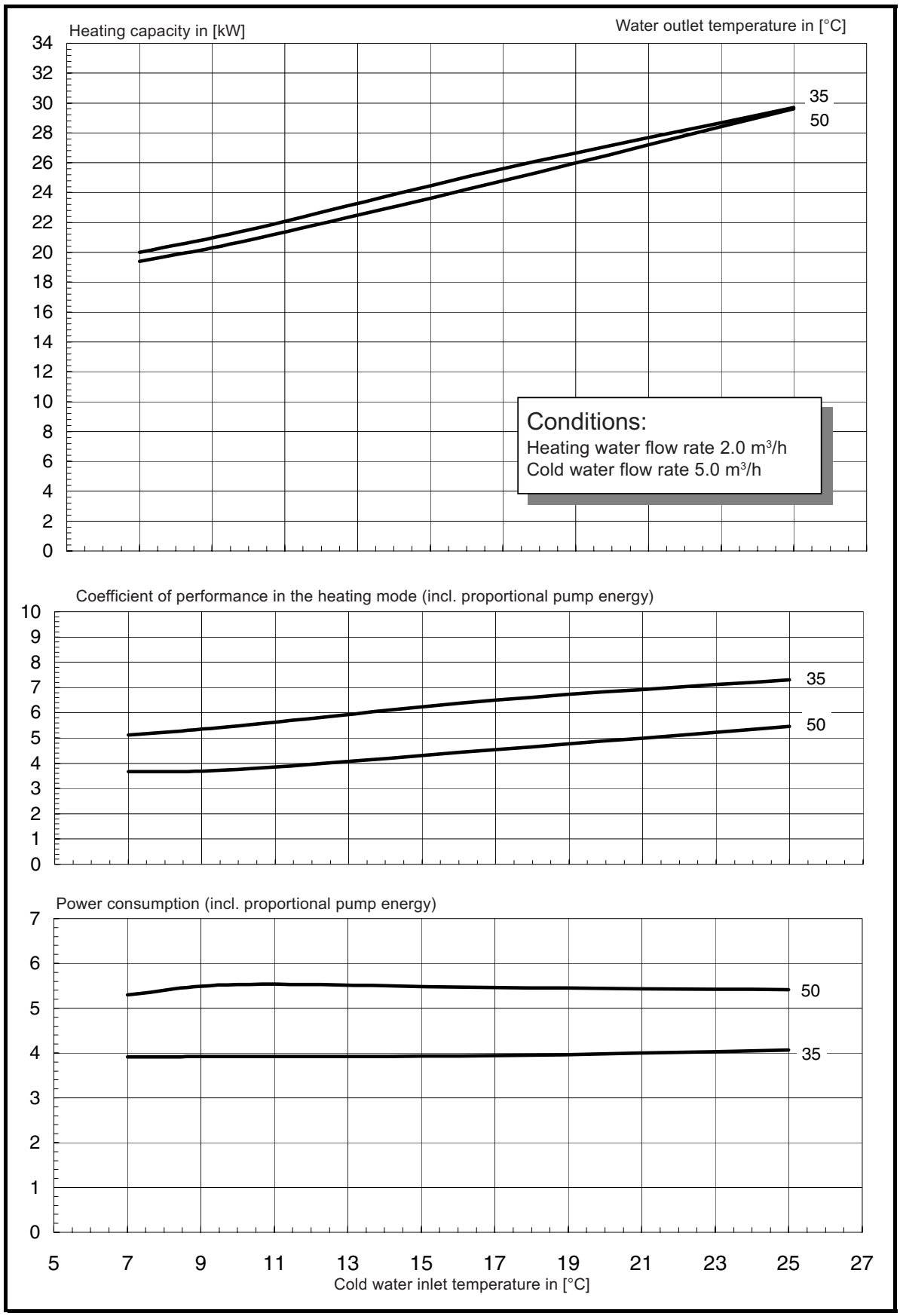
11.3.3 Performance Curves .. 14CS



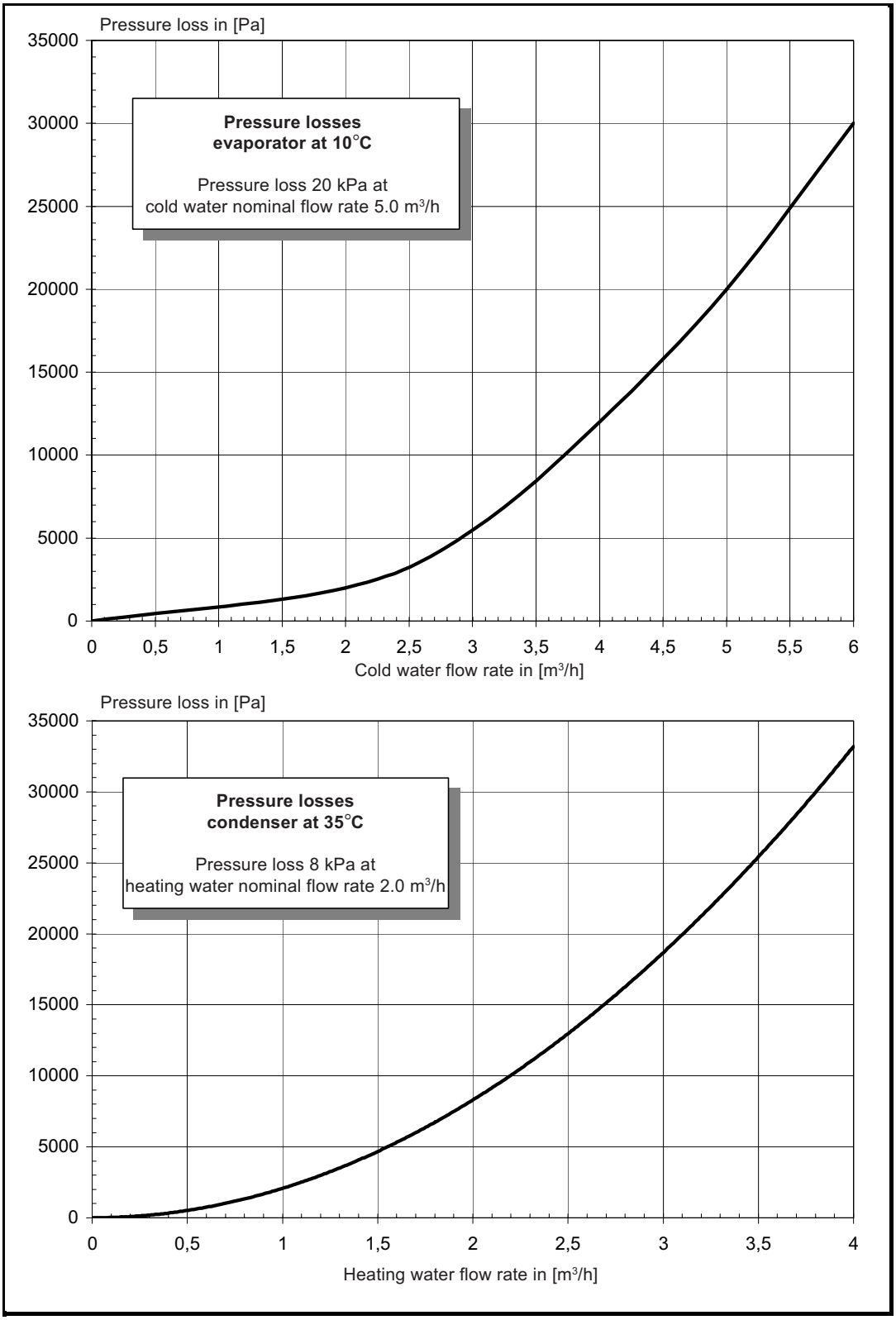
11.3.4 Pressure Losses .. 14CS



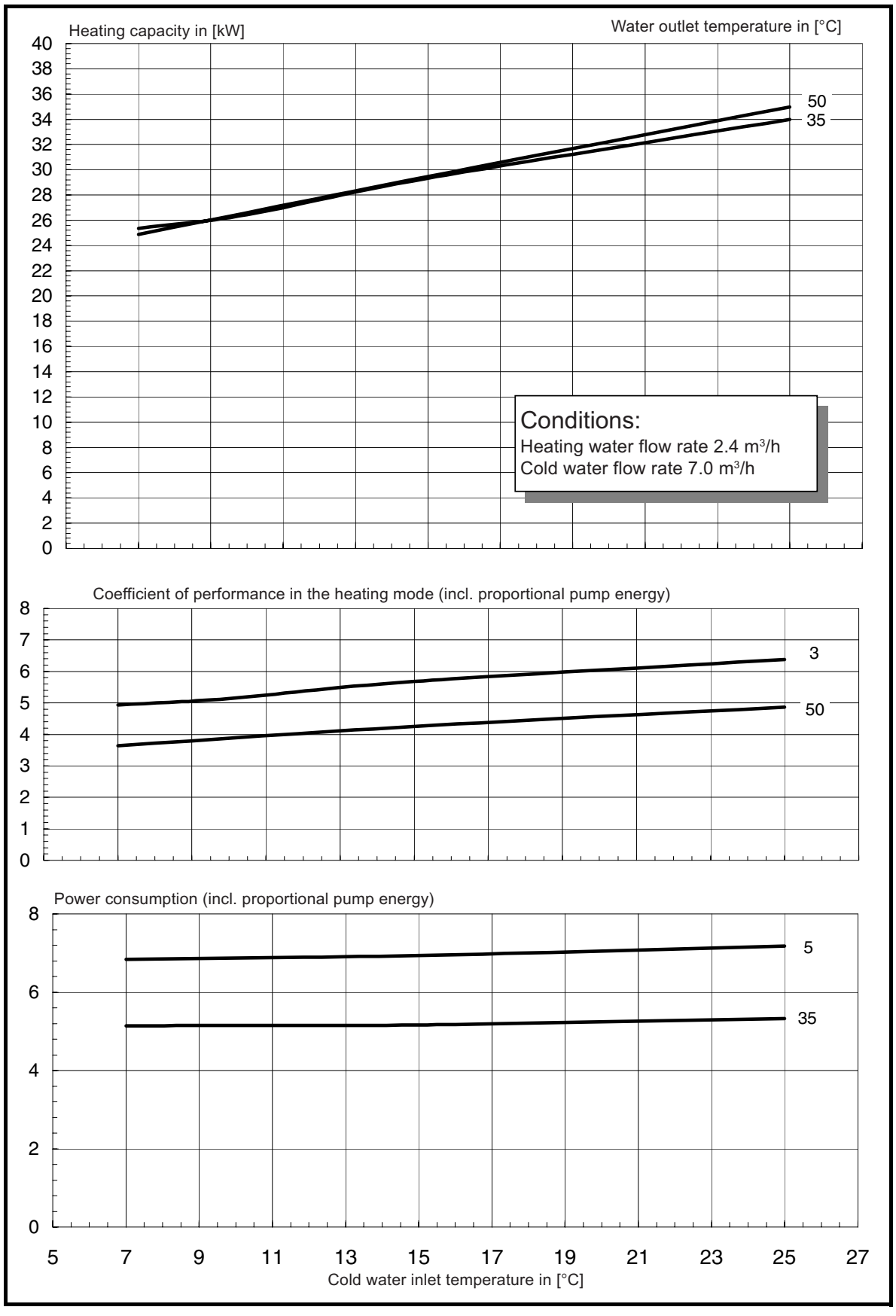
11.3.5 Performance Curves .. 22CS



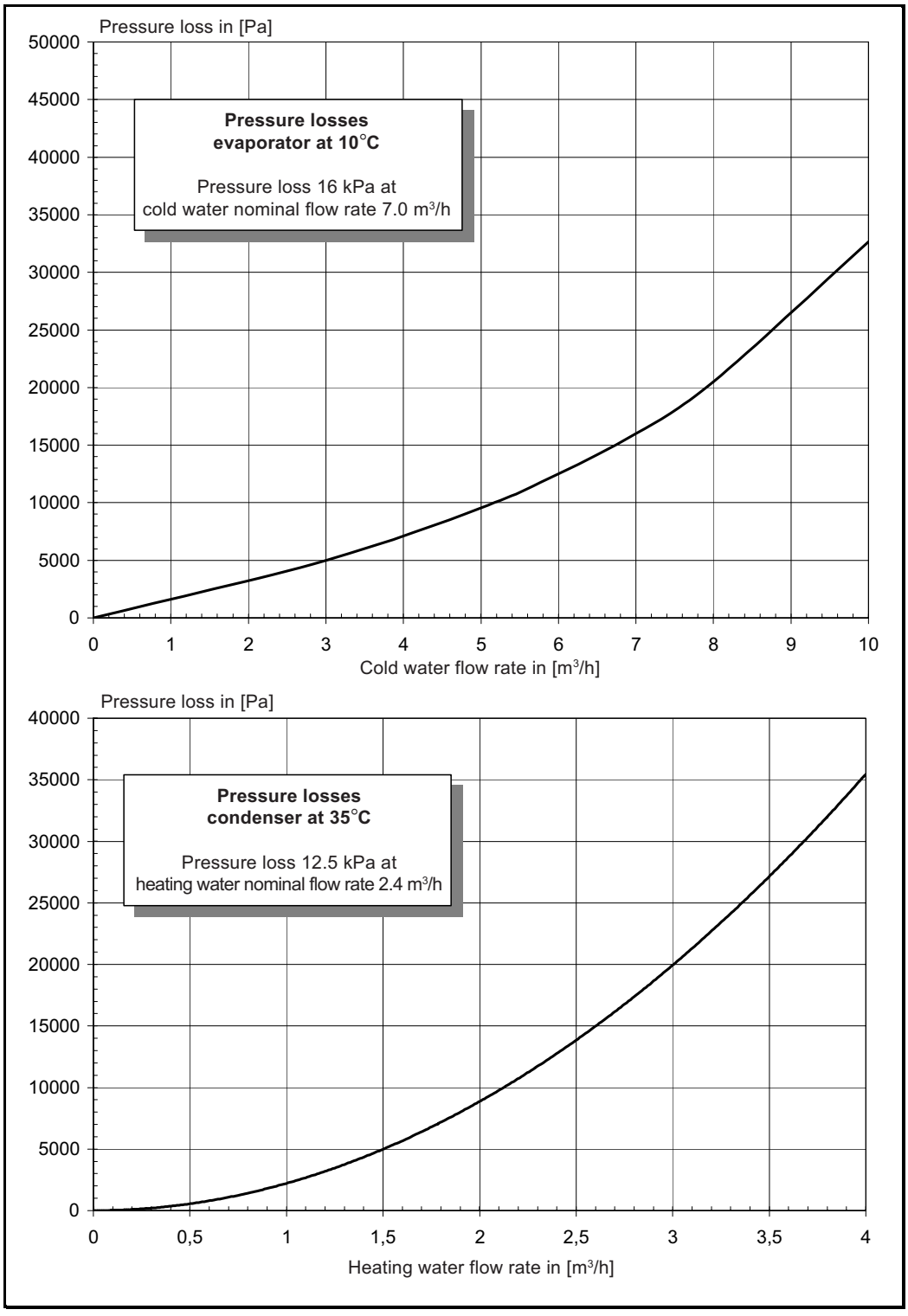
11.3.6 Pressure Losses .. 22CS



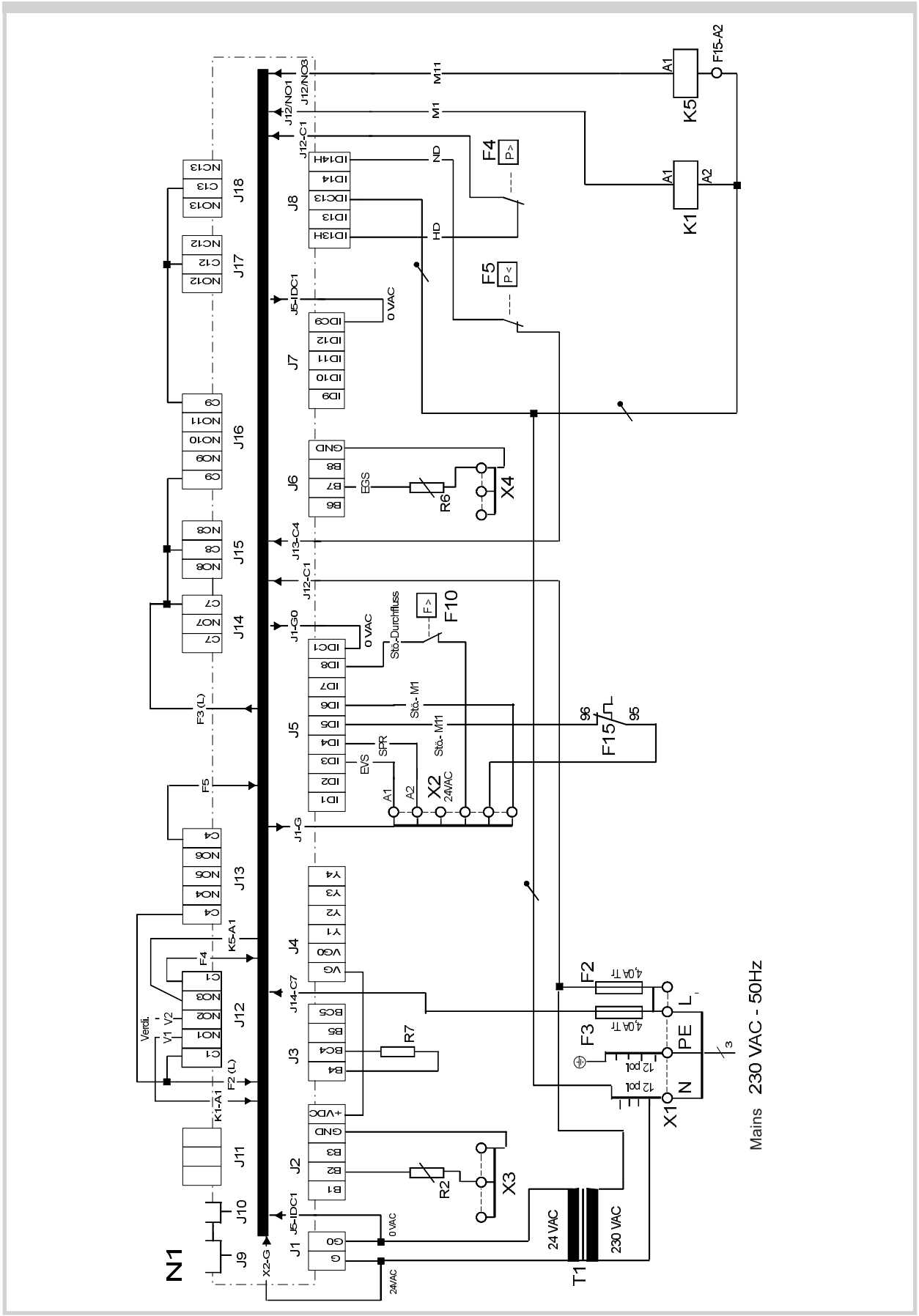
11.3.7 Performance Curves .. 27CS



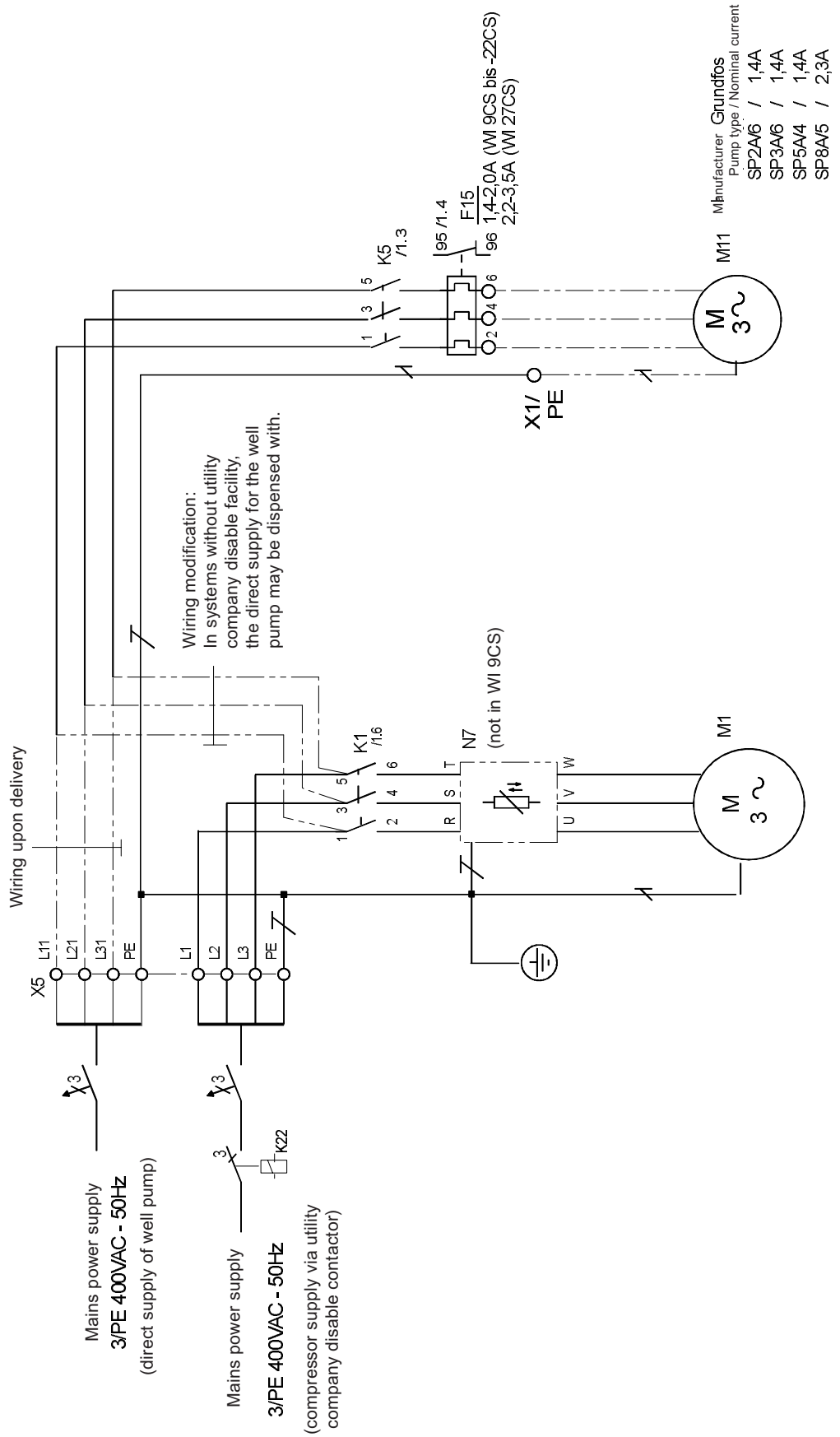
11.3.8 Pressure Losses .. 27CS



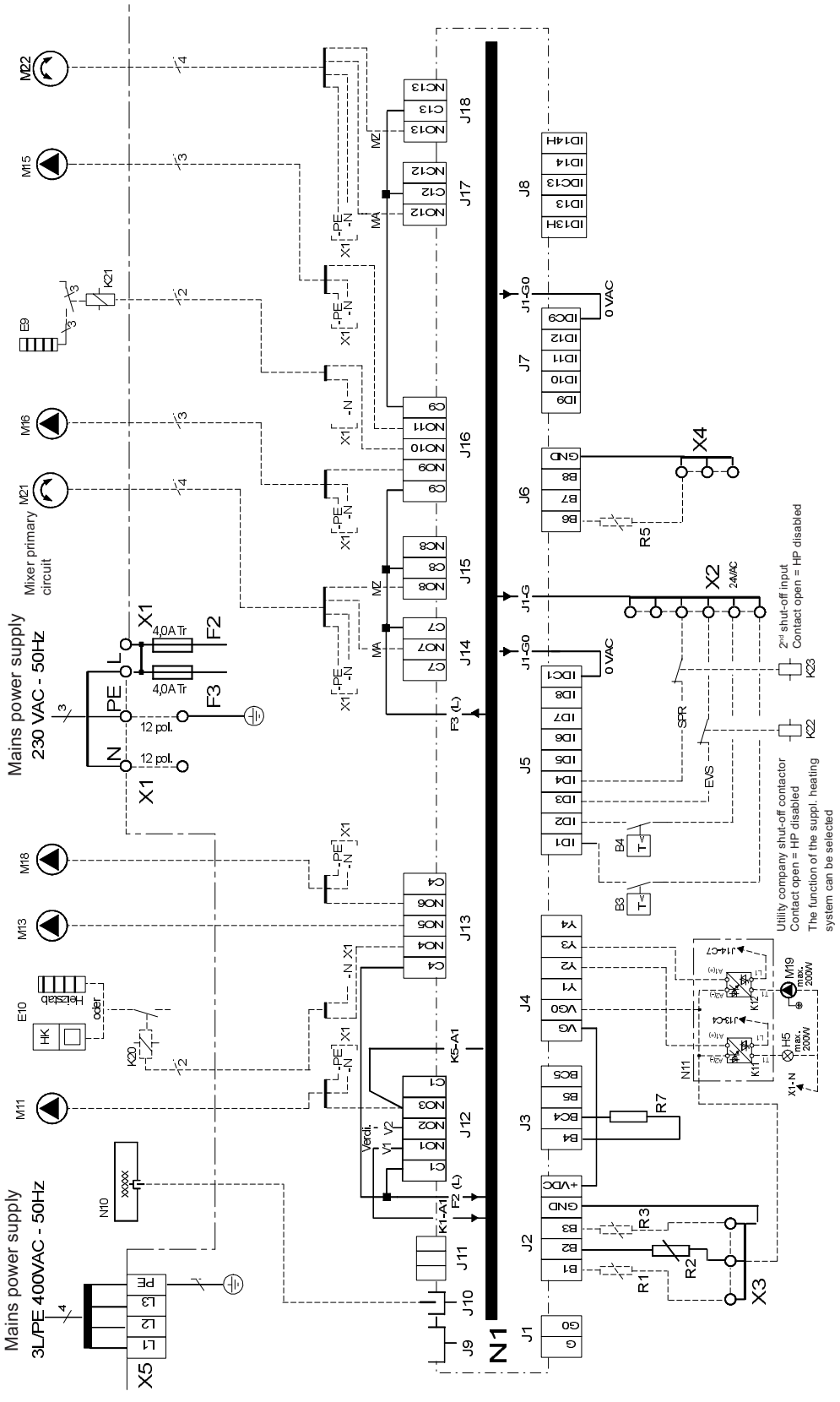
11.4.1 Control .. 9CS to .. 22CS



11.4.2 Load .. 9CS to .. 22CS



11.4.3 Terminal Diagram .. 9CS to .. 22CS



11.4.4 Legend .. 9CS TO .. 22CS

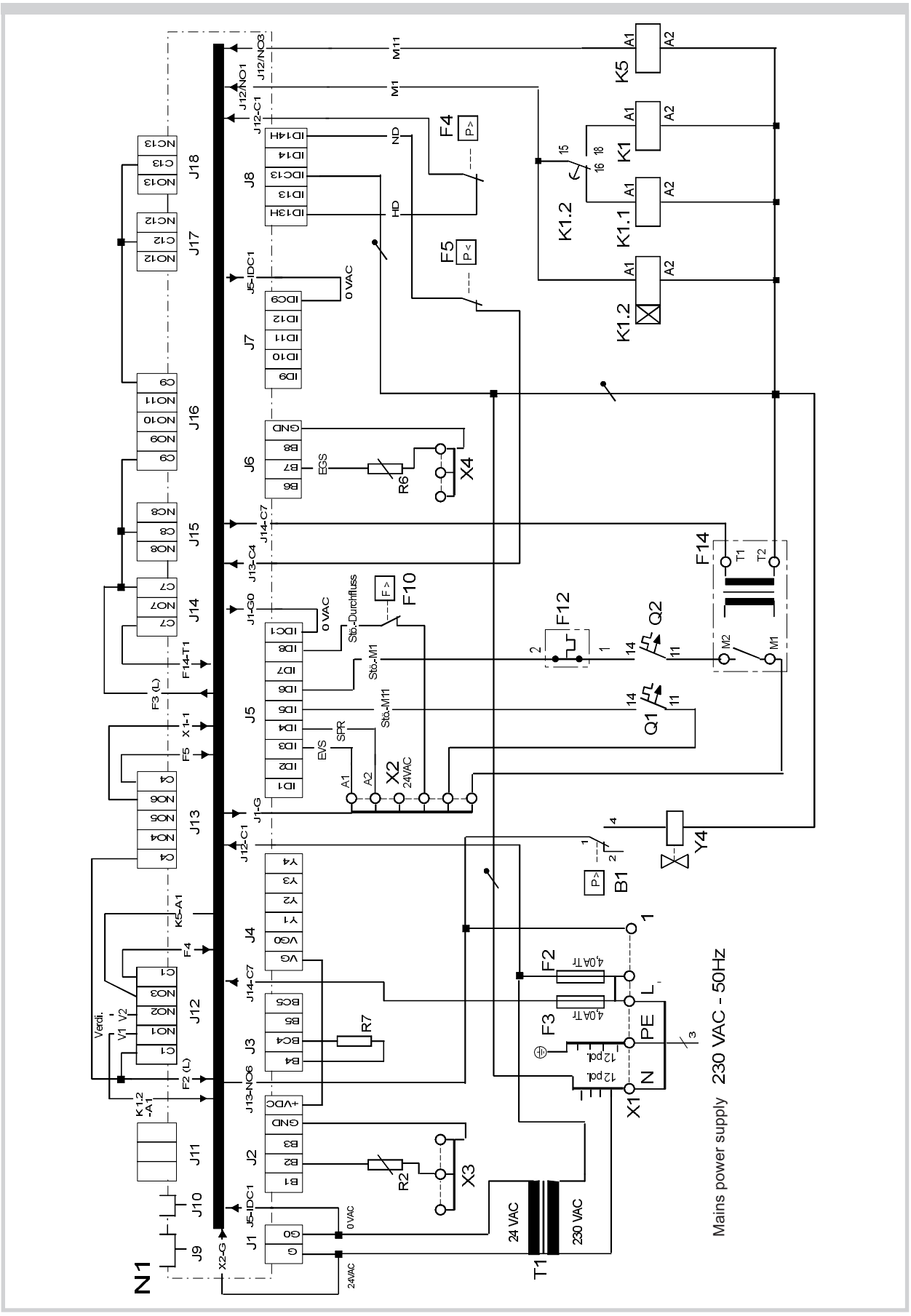
A1	Wire jumper, must be removed upon installation of a utility company disable contactor	
A2	Wire jumper, must be removed if 2nd disable input is used	
B3*	Thermostat, hot water	
B4*	Thermostat, swimming pool water	
E9*	Electr. immersion heater, hot water	
E10*	Suppl. heat source (boiler or electr. heating element	
F2	Load fuse for N1 relay outputs across J12 at J13	4.0 A slow-acting
F3	Load fuse for N1 relay outputs across J15 to J18	4.0 A slow-acting
F4	Pressostat high pressure	
F5	Pressostat low pressure (from ..22CS, F5 is a limiter with manual reset)	
F10	Flow control switch	
F15	Overload relay for M11 / the overload relay is designed for the pump included in the brine kit	
H5*	Fault indicator lamp	
J1...J18	Terminal connector at N1	
K1	Contactor, compressor	
K5	Contactor, primary pump	
K11*	Electron. relay remote fault indicator (on relay module)	
K12*	Electron. relay, swimming pool water circulating pump (on relay module)	
K20*	Contactor for E10	
K21*	Contactor for E9	
K22*	Utility company disable contactor	
K23*	SPR auxiliary relay	
M1	Compressor	
M11*	Primary pump	
M13*	Heating circulating pump	
M15*	Heating circulating pump	
M16*	Auxiliary circulating pump	
M18*	Hot water circulating pump	
M19*	Swimming pool water circulating pump	
M21*	Mixer, primary circuit	
M22*	Mixer heating circuit 2	
N1	Heat pump controller	
N7	Soft start control (not in WI 9CS units)	
N10*	Remote control station	
N11*	Relay module	
R1	External sensor	
R2	Return sensor	
R3	Hot water sensor (as an alternative to the hot water thermostat)	
R5	Sensor for heating circuit 2	
R6	Freeze protection sensor	
R7	Coding resistor 10k	
T1	Safety isolating transformer 230/24VAC-28VA	
X1	Terminal strip mains control L/N/PE-230VAC-50Hz/fuses/N and PE terminal block	
X2	Terminal strip 24VAC terminal block	
X3	Terminal strip GND terminal block for sensors R1/-2 and -3 at J2	
X4	Terminal strip GND terminal block for sensors R5 and -6 at J6	
X5	Terminal strip power supply 3L/PE-400VAC-50Hz	

Abbreviations:

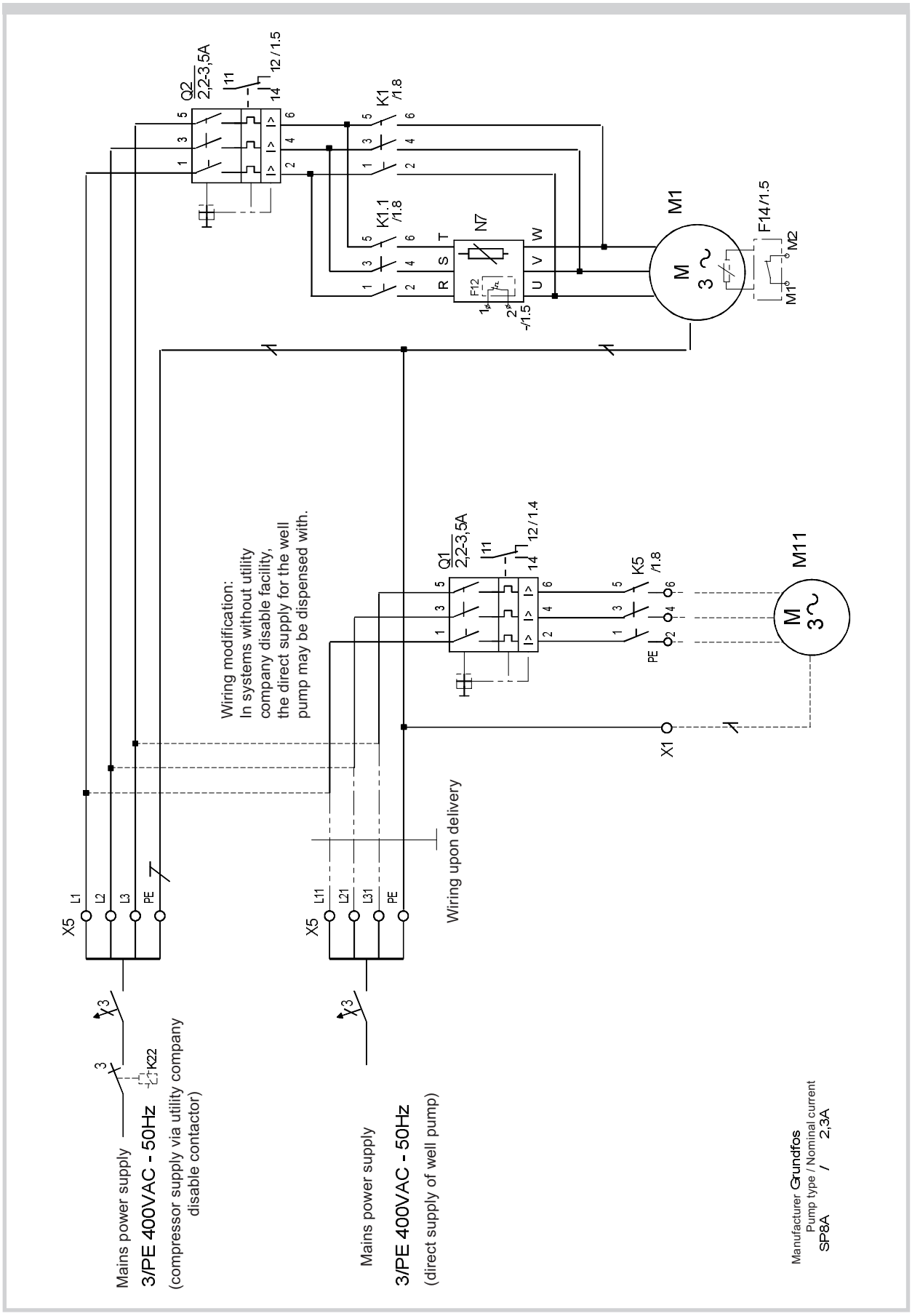
EVS	Utility company disable input
SPR	Supplementary disable input
MA*	Mixer OPEN - primary heating circuit
MZ	Mixer CLOSED - primary heating circuit

* Components to be supplied by the customer, or available as accessories

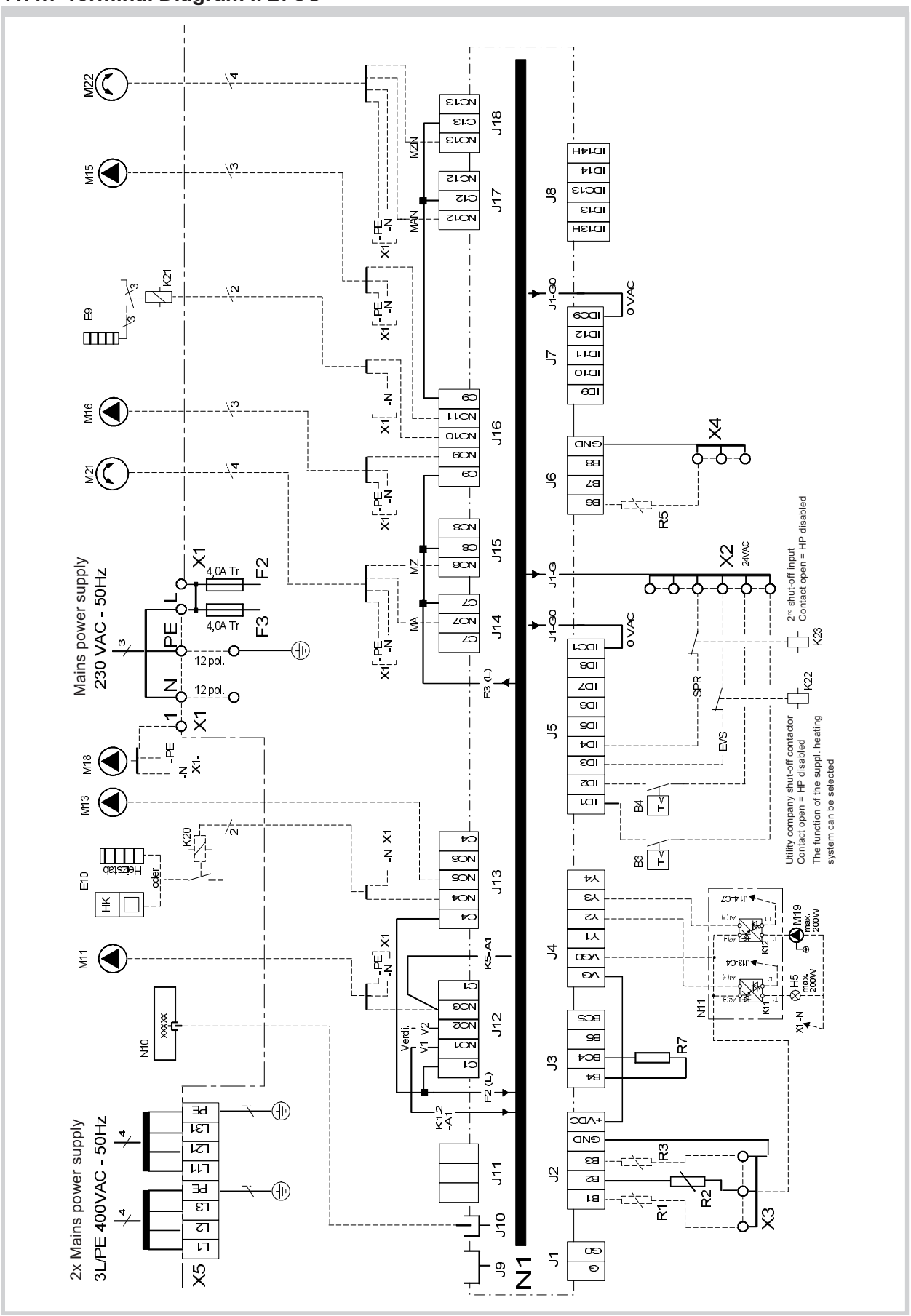
11.4.5 Control .. 27CS



11.4.6 Load .. 27CS



11.4.7 Terminal Diagram .. 27CS



11.4.8 Legend .. 27CS

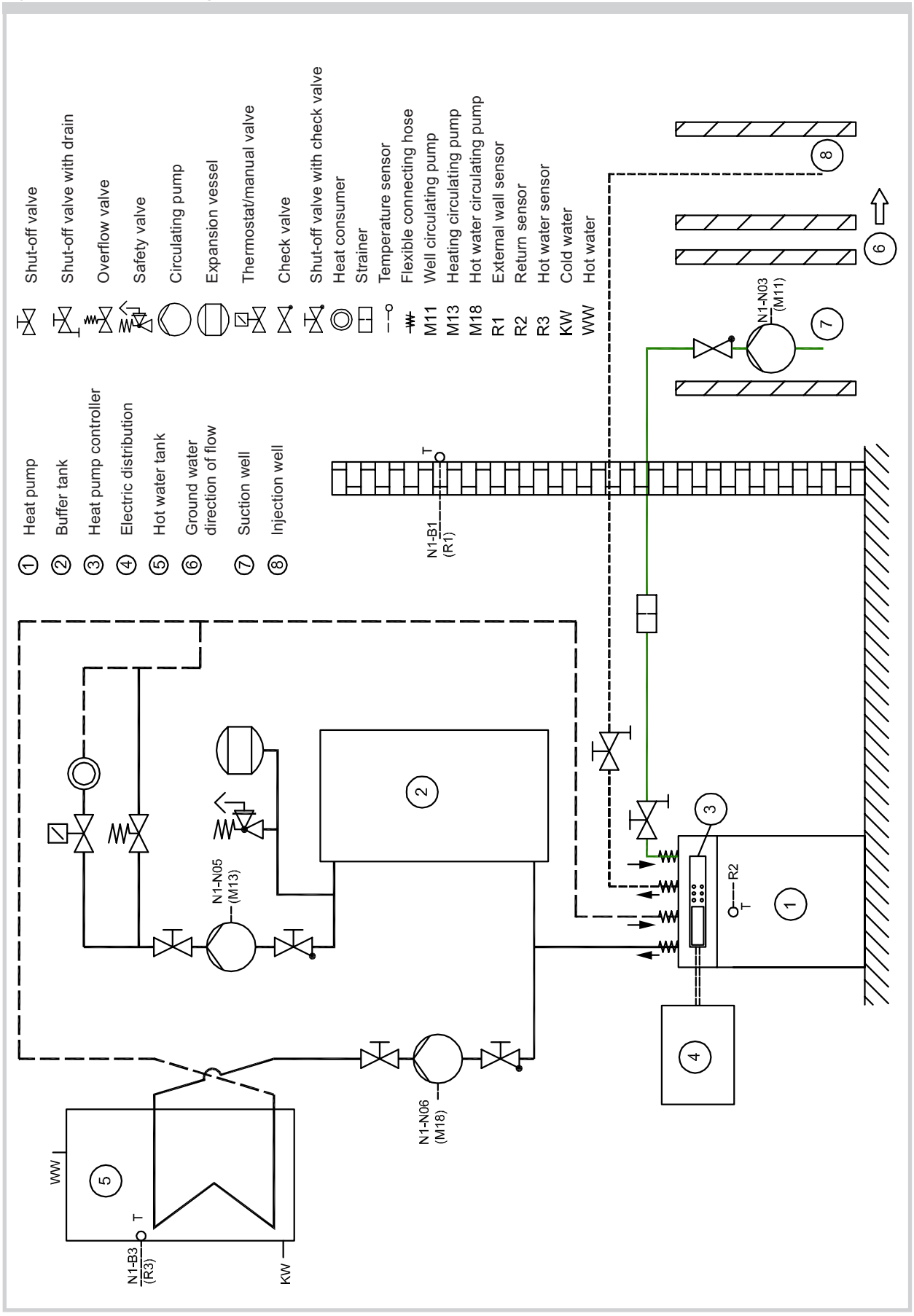
A1	Wire jumper, must be removed upon installation of a utility company disable contactor	
A2	Wire jumper, must be removed if 2nd disable input is used	
B1	Pressostat power adaptation for hot water preparation	
B3*	Thermostat, hot water	
B4*	Thermostat, swimming pool water	
E9*	Electr. immersion heater, hot water	
E10*	Suppl. heating system	
F2	Load fuse for N1 relay outputs across J12 and J13	4,0 A slow-acting
F3	Load fuse for N1 relay outputs across J15 to J18	4.0 A slow-acting
F4	Pressostat high pressure	
F5	Pressostat low pressure limiter with manual reset	
F10	Flow control switch	
F12	Thermal protector N7	
F14	Electronic motor protection compressor 1	
H5*	Remote fault indicator lamp	
J1...J18	Terminal connector at N1	
K1	Contactor, compressor	
K1.1	Contactor, breakaway starting current limiter of M1	
K1.2	Time relay, delay K1	
K5	Contactor for M1	
K11*	Electron. relay for H5	
K12*	Electron. relay for M19	
K20*	Contactor for E10	
K21*	Contactor for E9	
K22*	Utility company disable contactor	
K23*	SPR auxiliary relay	
M1	Compressor	
M11*	Primary pump	
M13*	Heating circulating pump	
M15*	Circulating pump, heating circuit 2	
M16*	Auxiliary circulating pump	
M18*	Hot water circulating pump	
M19*	Swimming pool water circulating pump	
M21*	Mixer primary circuit	
M22*	Mixer heating circuit 2	
N1	Heat pump controller	
N7	Soft start board	
N10*	Remote control station	
N11*	Relay module	
Q1	Power circuit-breaker, well pump	
Q2	Power circuit-breaker, compressor	
R1	External sensor	
R2	Return sensor	
R3*	Hot water sensor (as an alternative to the hot water thermostat)	
R5	Sensor for heating circuit 2	
R6	Freeze protection sensor	
R7	Coding resistor 10k	
T1	Safety isolating transformer 230/24VAC-28VA	
X1	Terminal strip mains control L/N/PE-230VAC-50Hz/fuses/N and PE terminal block	
X2	Terminal strip 24VAC terminal block	
X3	Terminal strip GND terminal block for sensors R1/-2 and -3 at J2	
X4	Terminal strip GND terminal block for sensors R5 and -6 at J6	
X5	Terminal strip power supply 3L/PE-400VAC-50Hz	
Y4	Solenoid valve power adaptation for hot water preparation	

Abbreviations:

EVS	Utility company disable input
SPR	Supplementary disable input
MA*	Mixer OPEN - primary heating circuit
MZ	Mixer CLOSED - primary heating circuit

* Components to be supplied by the customer, or available as accessories

Hydraulic Block Diagram



EC Declaration of conformity

CE

Declaration of Conformity ©

The undersigned

KKW Kulmbacher Klimageräte-Werk GmbH,
Division Dimplex
Am Goldenen Feld 18
D-95326 Kulmbach

hereby confirm that the design and construction of the product(s) listed below, in the version(s) placed on the market by us, conform to the relevant basic requirements of the applicable EC directives.

This declaration becomes invalidated if any modifications are made to the product(s) without our prior authorization.

Designation of the product(s):	***EC Directives:***
Brine-to-water heat pumps *for indoor installation withR407C*	*EC Low Voltage Directive (73/23/EEC)* *EC EMC Directive (89/336/EEC)*
Water-to-water heat pumps *for indoor installation withR407C*	*Pressure Equipment Directive (97/23/EEC)*

Type(s):	***Harmonized EN Standards:***	
SI 5CS	*EN 255:1997*	
SI 7CS	*EN 378:1994*	
SI 9CS	*DIN EN 60335-1 (VDE 0700 Teil1):1995-10*	*EN 60335-1:1994+A11:1995*
SI 11CS	*DIN EN 60335-1/A1 (VDE 0700 Teil1/A1):1997-08*	*EN 60335-1/A1:1996*
SI 14CS	*DIN EN 60335-1/A12 (VDE 0700 Teil 1/A12):1997-08*	*EN 60335-1/A12:1996*
SI 17CS	*DIN EN 60335-1/A13 (VDE 0700 Teil 1/A13):1998-12*	*EN 60335-1/A13:1998*
SI 21CS	*DIN EN 60335-1/A14 (VDE 0700 Teil 1/A14):1999-05*	*EN 60335-1/A14:1998*
	DIN EN 60335-2-40 (VDE 0700 Teil 40):1998-07	*EN 60335-2-40:1997*
	DIN EN 55014-2 (VDE 0875 Teil 14-2):1997-10	*EN 55014-2:1997*
WI 9CS	*Requirements of category II*	
WI 14CS	*DIN EN 55014-1 (VDE 0875 Teil 14-1):1999-10*	*EN 55014-1:1993+A1:1997+A2:1999*
WI 22CS	*DIN EN 61000-3-2 (VDE 0838 Teil 2):1998-10*	*EN 61000-3-2:1995+ Corrigendum:1997+A1:1998+A2:1998*
WI 27CS	*DIN EN 61000-3-2/A14 (VDE 0838 Teil 2/A14):2001-01*	*EN 61000-3-2:1995/A14:2000*
	DIN EN 61000-3-3 (VDE 0838 Teil 3):1996-03	*EN 61000-3-3:1995*

Order No.:		***National Standard/Directives:***		
		D	***A***	***CH***
337 280	***338 720***	*VBG20*		*SVTI*
337 290	***337 350***			
337 300	***337 360***			
337 310	***337 370***			
337 320				
337 330				
337 340				

Kulmbach, 07.05.2002

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Notes

Notes

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